

CLAIMS

What is claimed is:

1. A data communication system comprising:
 - a headend for generating a transmission signal;
 - a plurality of distribution hubs operationally coupled to said headend;
 - a plurality of fiber nodes, each of said fiber nodes being operationally coupled to said distribution hub by a transmission cable and a return cable, said transmission cable coupled to each fiber node providing said transmission signal to said fiber node;
 - a plurality of service lines extending from each of said fiber nodes to operationally couple a plurality of subscriber sites to each of said fiber nodes, and to provide said transmission signal received from said headend at each of said fiber nodes to said subscriber sites; and
 - a plurality of cable modem termination packages operationally coupled to one of said plurality of distribution hubs, one of said plurality of fiber nodes, or one of said plurality of service lines, said cable modem termination packages located downstream from said headend.
2. The system of claim 1, wherein said transmission signal includes a cable television (CATV) signal.

1 3. The system of claim 1, wherein said cable modem termination packages are
2 located at said distribution hubs.

1 4. The system of claim 1, wherein said cable modem termination packages are
2 located at said fiber nodes.

1 5. The system of claim 1, wherein said cable modem termination packages are
2 located at said subscriber sites.

1 6. The system of claim 1, wherein said fiber nodes further include:
2 an upstream connection operationally connected, by a plurality of first data
3 carrying cables, to a first distribution point; and
4 a downstream connection operationally connected by a plurality of second data
5 carrying cables, to a second distribution point.

1 7. The system of claim 6, wherein said plurality of first data carrying cables are fiber
2 optic cables.

1 8. The system of claim 6, wherein said plurality of second data carrying cables are
2 fiber optic cables.

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1 9. The system of claim 6, wherein said plurality of second data carrying cables are
2 co-axial cables.

1 10. The system of claim 6, wherein said first distribution point is a distribution hub.

1 11. The system of claim 6, wherein said first distribution point is a fiber node.

1 12. The system of claim 6, wherein said second distribution point is a fiber node.

1 13. The system of claim 6, wherein said second distribution point is a subscriber site.

1 14. The system of claim 6, wherein said first distribution point is a distribution hub.

15. A method of employing a data communication system, said method comprising:

generating a transmission signal at a headend;

operationally coupling a plurality of distribution hubs to said headend;

operationally coupling a plurality of fiber nodes to said distribution hub by a

transmission cable and a return cable, said transmission cable coupled to each fiber node

providing said transmission signal to said fiber node;

providing a plurality of service lines extending from each of said fiber nodes to

operationally couple a plurality of subscriber sites to each of said fiber nodes, and

providing said transmission signal received from said headend at each of said fiber nodes

to said subscriber sites; and

operationally coupling a plurality of cable modem termination packages to said

data communications system, said cable modem termination packages located

downstream from said headend.

16. The method of claim 15, wherein said step of generating a transmission signal

includes generating a cable television (CATV) signal.

17. The method of claim 15, wherein said step of coupling said cable modem

termination packages includes locating said cable modem termination packages at said

distribution hubs.

1 18. The method of claim 15, wherein said step of coupling said cable modem
2 termination packages includes locating said cable modem termination packages at said
3 fiber nodes.

1 19. The method of claim 15, wherein said step of coupling said cable modem
2 termination packages includes locating said cable modem termination packages at said
3 subscriber sites.

1 20. The method of claim 15, wherein said step of operationally coupling a plurality
2 of fiber nodes to said distribution hub further includes:
3 operationally connecting an upstream connection of said fiber node, with a
4 plurality of first data carrying cables, to a first distribution point; and
5 operationally connecting a downstream connection of said fiber node with a
6 plurality of second data carrying cables, to a second distribution point.

1 21. The method of claim 20, wherein said plurality of first data carrying cables are
2 fiber optic cables.

1 22. The method of claim 20, wherein said plurality of second data carrying cables are
2 fiber optic cables.

1 23. The method of claim 20, wherein said plurality of second data carrying cables are
2 co-axial cables.

1 24. The method of claim 20, wherein said first distribution point is a distribution hub.

1 25. The method of claim 20, wherein said first distribution point is a fiber node.

1 26. The method of claim 20, wherein said second distribution point is a fiber node.

1 27. The method of claim 20, wherein said second distribution point is a subscriber
2 site.

1 28. The method of claim 20, wherein said first distribution point is a distribution hub.

1 29. A cable modem termination package comprising:
 2 a demodulator circuit;
 3 a multiplexor circuit;
 4 a demultiplexor circuit;
 5 at least one optical transmitter; and
 6 at least one optical receiver.

1 30. The cable modem termination package of claim 29, further comprising connection
 2 devices for operationally connecting said cable termination package to a data
 3 communication system.

1 31. The package of claim 30, wherein said connection devices include coaxial cable
 2 connection devices.

1 32. The package of claim 30, wherein said connection devices include fiber optic
 2 cable connection devices.

1 33. The package of claim 29, wherein said multiplexor circuit is a time division
 2 multiplexor circuit.

1 34. The package of claim 29, wherein said multiplexor circuit is a wavelength
 2 division multiplexor circuit.

1 35. The package of claim 29, wherein said demultiplexor circuit is a time division
2 demultiplexor circuit.

1 36. The package of claim 29, wherein said demultiplexor circuit is a wavelength
2 division demultiplexor circuit.

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